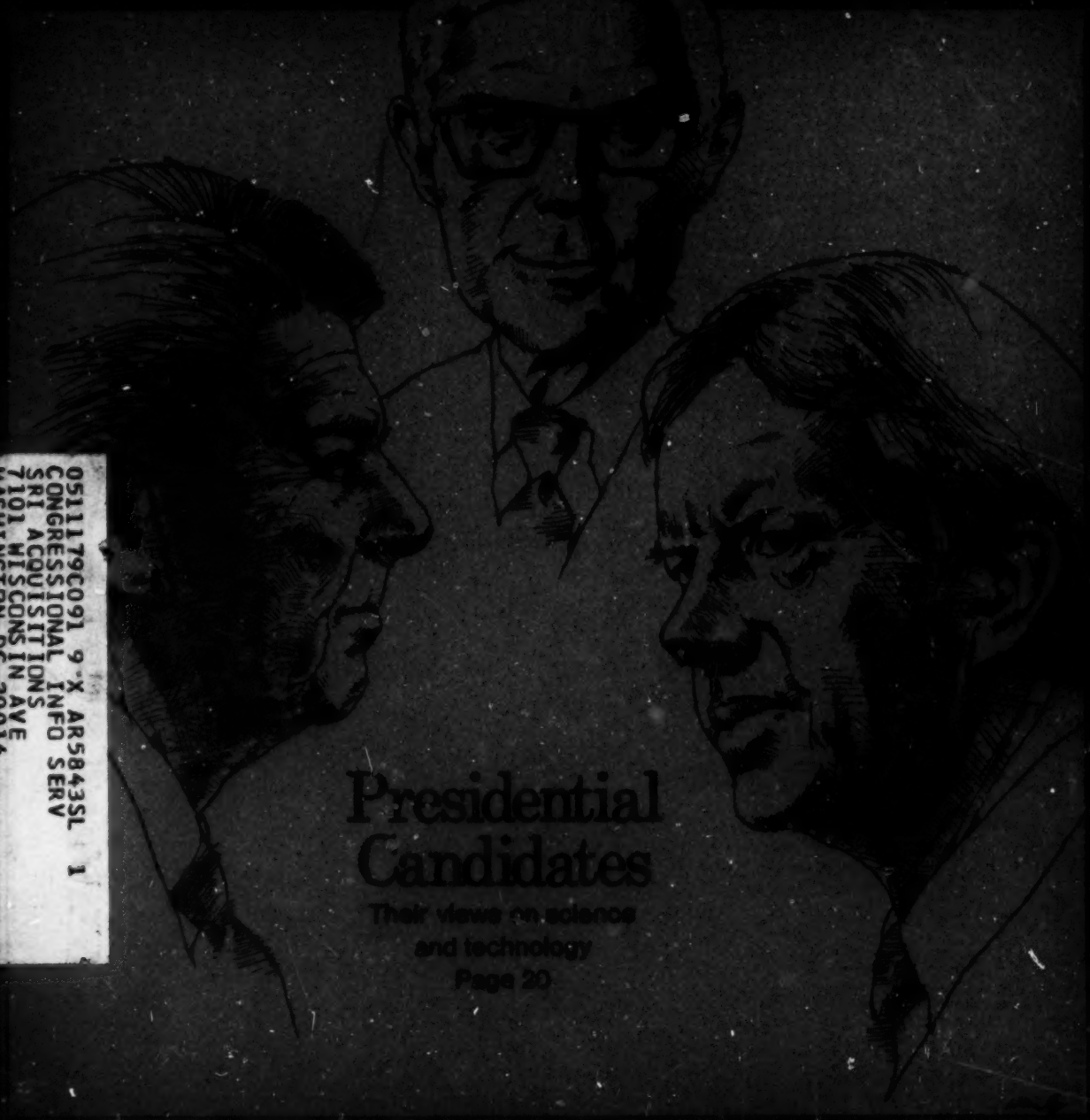
Chemical & Engineering NEWS



Presidential Candidates

Their views on science and technology

Page 29

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Chemical & Engineering NEWS

2 Letters
3 Editor's Page

Concentrates
8 Business
19 Government
28 Science/Technology

The Departments
42 Awards
44 People
56 Newscripts

News of the Week

- ***Both earnings and profitability were down*** *in the third quarter at many major chemical companies, but numerous firms see signs of business picking up soon.* ***Page 4***
- ***Week of national debate on nuclear war*** *and nuclear arms issues is being planned, tentatively slated for next April.* ***Page 5***
- ***Genetic engineering field has attracted*** *investment from two big chemical firms: Monsanto has purchased an interest in Biogen, Dow in Collaborative Genetics.* ***Page 5***
- ***Health risk from oral contraceptives*** *appears to be negligible, according to a just-completed, very comprehensive study.* ***Page 6***
- ***Amoco polypropylene plant has exploded,*** *killing five and injuring 23 people; cause of the blast is still unknown.* ***Page 6***
- ***Science and engineering education*** *has declined in quality since the early 1960's, a White House report says.* ***Page 6***

Business

- ***Acrylonitrile-butadiene-styrene plastics*** *have been hit hard by the recession; demand is off sharply, mainly because of downturn in the construction market.* ***Page 13***

International

- ***U.S. foreign chemical investment*** *still totals more and performs better than other countries' growing investment in U.S. chemical industry.* ***Page 17***

Government

- ***Presidential candidates*** *Jimmy Carter, Ronald Reagan, and John Anderson present their views on the many important issues affecting science and technology in responding to questions posed by C&EN.* ***Page 20***

Science

- ***National Resource for Computation in Chemistry*** *will end operations because of cutoff in funding prompted by critical review of its three-year performance.* ***Page 29***
- ***Nearly 8000 scientists from 44 countries*** *have pledged to suspend scientific cooperation with the U.S.S.R. because of treatment of dissident Soviet scientists.* ***Page 30***

Technology

- ***Processes to make ammonia from coal,*** *several new fertilizers were detailed by Tennessee Valley Authority at its biennial show.* ***Page 32***

ACS News

- ***Stephen D. Ziman and David L. Eck*** *complete year as 1979–80 ACS Congressional Fellows; each believes he was able to contribute to the policy process.* ***Page 34***
- ***Regional Employment Clearing House*** *will be operated by ACS at the 12th Central Regional Meeting in Pittsburgh.* ***Page 35***
- ***Official reports*** *of board and council actions at the congress in Las Vegas.* ***Page 36***

CHEMICAL EARNINGS DROP IN THIRD QUARTER

Net earnings as well as profit margins at many of the major chemical companies fell in the third quarter—in some cases dramatically.

For 25 companies surveyed by C&EN thus far, earnings excluding nonrecurring items in the third quarter have fallen an average of 16.5% from the third quarter last year. Profit margins have dropped to an average 5.0% from last year's 6.4%.

For the first nine months of 1980, things are not much brighter. The drop in net profits for the 25 companies in the third quarter as well as the second has been enough to offset the rise in earnings in the first quarter. Thus, nine-month earnings have dropped 0.6% from last year's levels. Profit margins have fallen to 6.1% from 6.8% achieved in the first three quarters of 1979.

The drop in third-quarter earnings was not universal, but companies with lower performances far outnumbered those whose earnings improved. Of the 25 companies surveyed so far, profits dropped for 15 of them in the quarter. And, somewhat surprisingly, earnings of 14 companies were lower for the first nine months than in the comparable 1979 period.

The reasons for the earnings drop were basically the same as in the second quarter—a decrease in volumes and inability to make up increased costs.

For instance, Stauffer Chemical says that its domestic volume in the quarter was off 13% from a year ago. Dow Chemical says that most of its 19% earnings decline was caused by lower unit sales volume. Profits at Dow also were affected by softening of selling prices as many costs continued to increase. Du Pont says that its physical volume in the U.S. was off 14% from a year ago. As a result, Du Pont's U.S. earnings fell to 42 cents a share in the third quarter from 99 cents a share in the same period last year.

A new worry has now begun haunting U.S. companies—the prospect of slower international business. Although most companies say that business is holding up in Latin America and the Far East, some say that European business has begun to feel its own slowdown.

Du Pont says that its international results are mixed. International sales in the third quarter increased 8%, but volumes were off 6% from a year ago. Du Pont's business in Latin America, and particularly in Brazil, and U.S. exports to the Asia/Pacific region remained strong. But European business was weak.

G. J. Williams, Dow's financial vice president, says that that company's "business activity in Europe declined

Profitability falls for most companies on earnings drops

	Third-quarter 1980						Nine-months 1980					
$ Millions	Sales	Change from 1979	Earnings[a]	Change from 1979	Profit margin[b] 1980	Profit margin[b] 1979	Sales	Change from 1979	Earnings[a]	Change from 1979	Profit margin[b] 1980	Profit margin[b] 1979
Air Products	$ 369.3	6.2%	$23.3	−11.1%	6.3%	7.5%	$ 1,104.2	15.7%	$ 84.4	11.6%	7.6%	7.9%
Akzona	237.2	−0.8	−3.9	c	c	1.8	774.8	5.2	2.0	−89.5	0.3	2.6
Allied Chemical	1323.0	5.8	66.2	244.8	5.0	1.5	4,071.0	34.2	207.5	91.8	5.1	3.6
American Cyanamid	869.2	11.2	48.3	35.3	5.6	4.8	2,536.2	8.8	119.2	−0.3	4.7	5.1
Celanese	785.0	0.9	21.0	−43.2	2.7	4.8	2,435.0	4.4	82	−28.1	3.4	4.9
Diamond Shamrock[d]	773.2	27.5	42.6	15.1	5.5	6.1	2,297.6	36.3	155.3	29.8	6.8	7.1
Dow Chemical	2521.3	3.9	160.5	−19.1	6.4	8.2	7,853.5	15.4	562.2	−4.6	7.2	8.7
Du Pont	3169.7	1.2	96.1	−58.1	3.1	7.5	10,149.9	8.0	519.1	−27.4	5.1	7.6
Essex Chemical	42.1	23.5	1.1	−32.7	2.5	4.6	113.0	19.1	3.1	−27.2	2.8	4.5
Ethyl Corp.	429.9	−2.7	19.2	−31.8	4.5	6.3	1,309.0	6.8	64.5	−14.6	4.9	6.2
First Mississippi	57.6	30.6	3.8	65.2	6.6	5.2	194.8	29.2	17.1	83.9	8.8	6.2
Freeport Minerals	181.5	40.2	37.4	34.6	20.6	21.5	485.5	35.8	102.6	39.8	21.1	20.5
W. R. Grace	148.7	15.1	64.3	41.9	4.3	3.5	4,392.5	15.1	212.3	30.4	4.8	4.3
Hercules	582.0	−3.8	27.9	−33.3	4.6	6.9	1,852.0	5.9	88.5	−25.1	4.8	6.8
International Minerals	462.8	19.6	44.3	30.3	9.6	8.8	1,421.8	18.6	127.2	29.9	8.9	8.2
Monsanto	1538.7	2.8	29.6	−70.1	1.9	6.6	4,909.8	5.6	217.0	−32.2	4.4	6.9
Olin	429.1	0.2	12.1	1.7	2.8	2.8	1,387.8	3.8	61.4	8.3	4.4	4.2
Pennwalt	292.1	9.6	9.0	−22.0	3.1	4.3	887.3	11.5	32.2	15.5	3.6	4.8
PPG Industries	765.3	−2.4	47.8	−15.1	6.2	7.2	2,320.0	1.3	142.2	−13.2	6.1	7.2
Reichold Chemicals	214.0	−3.3	4.7	275.0	2.2	0.6	663.5	1.7	9.1	−6.2	1.4	1.5
Rohm & Haas	403.9	3.0	22.6	−13.9	5.6	6.7	1,306.7	8.7	76.7	−0.8	5.9	6.4
Stauffer Chemical	329.8	5.5	4.5	−65.1	1.4	4.1	1,269.8	9.8	94.1	−5.9	7.4	8.6
Texasgulf	285.7	49.8	68.9	96.2	24.1	18.3	806.3	41.7	244.6	183.9	30.3	183
Thiokol	170.6	27.0	6.6	−25.0	3.9	6.6	478.7	15.2	23.9	−1.6	5.0	5.8
Union Carbide	2363.7	2.5	153.8	−13.6	6.5	7.7	7,320.2	9.0	523.6	2.5	7.2	7.5

a After-tax, before major extraordinary or nonrecurring items, for continuing operations. b After-tax income as a percentage of sales. c Deficit. d Earnings exclude major extraordinary or nonrecurring items.

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during the quarter. Dow plant operations were reduced correspondingly to minimize inventory buildup."

The one bright spot for chemical companies in the third quarter seems to be an apparent turnaround in fibers activity, which has been depressed for some time. However, this apparent upswing did not affect all fiber producers. Monsanto, Du Pont, and Akzona all suffered earnings declines in their fibers operations. But Celanese's fibers earnings increased 36% in the quarter, and Allied Chemical's operating profits from its fibers operations improved.

The common thread that is running through most of the earnings reports is a hope that the third quarter represented a bottom to the economic slowdown. This was voiced by a number of companies in a number of ways, but in general the tone was that business had either picked up in the late part of the quarter or that there were signs that it would be picking up soon. □

Public debate of nuclear arms planned

A week of nationwide debate and study that will do for public awareness of the issue of nuclear war what "Earth Day" did in 1970 for such awareness of environmental matters is the goal of an ad hoc group now in the throes of getting organized.

Dubbed "Ground Zero," the proposed organization perceives itself as a coalition of other groups. It is planned around the belief that an educated and involved public is critical to dealing with nuclear war and nuclear arms issues. The week of discussion is tentatively scheduled for April 19 to 26, 1981. Under present plans, the organization itself will go out of existence immediately afterward.

An initial meeting in Washington, D.C., last week to elicit interest in the group was attended by representatives and observers from professional, educational, religious, labor, and scientific organizations. Included were the American Chemical Society, American Association for the Advancement of Science, and National Education Association. There was strong agreement that for about the past 15 years the public has shied away from active concern about nuclear war, considering it to be either unthinkable or beyond comprehension. There also was consensus that this attitude can be changed with a concerted educational effort.

At this stage organizers of Ground Zero are seeking commitments from scientific and other groups for funding, staff support, office space, or other help. They also seek to encourage other organizations to develop their own programs.

Early plans for the week of national debate are elaborate. They call for town meetings, religious activities, programs in the arts, projects at schools and universities, and involvement of the news media. The idea is to center all activity around three questions—How could a nuclear war start? What would be the consequences of nuclear war? How can nuclear war be prevented?

At the Washington meeting, keynote speaker William Colby brought home the immediacy of the nuclear threat. He stressed that nuclear war is neither theoretical, fictional, nor "something out of Dr. Strangelove." He said it is a "hard possibility." The former director of the Central Intelligence Agency pointed out that the targeting doctrines of both the U.S. and the Soviet Union are based on selective use of strategic nuclear weapons. He also explained that national policy for stopping a Soviet invasion of Western Europe calls for use of tactical nuclear weapons.

Although the tenor of the meeting last week was generally supportive of the Ground Zero concept, two critical issues were raised. Could such an ambitious effort be mounted effectively by next April? And how could the third question—How can nuclear war be prevented?—be handled on a purely educational basis, without becoming divisive? □

Monsanto, Dow invest in genetic engineering

Sponsorship by the chemical and related industries is becoming more and more prominent in the meteoric growth of genetic engineering (recombinant DNA) enterprises. Most recently, Monsanto and Dow Chemical have made major investments in this field.

Monsanto has purchased $20 million worth of preferred stock of Biogen N.V., a major developer of genetic engineering based in the Netherlands Antilles with laboratories in Geneva, Switzerland. And Dow has invested more than $5 million in Collaborative Genetics Inc., an independent firm located in Waltham, Mass.

These two moves add to earlier investments in gene splicing work of independent firms by Hoffman-La Roche, Eli Lilly, Schering-Plough, Bristol-Myers, Lubizol, Inco, Koppers, National Distillers, Standard Oil of California, Standard Oil (Ind.),

Fernandez: attractive opportunity

National Patent Development Corp., and Monsanto.

As part of Monsanto's purchase of Biogen stock, Monsanto vice chairman Louis Fernandez will join Biogen's board of supervisory directors. Fernandez comments, "Monsanto views its investment in Biogen as an attractive business opportunity consistent with its commitment to become an effective user of recombinant DNA techniques."

Biogen, whose work is aimed primarily at medical applications, says that Monsanto's investment continues Biogen's policy of financing through investment by a small number of leading corporations with businesses in likely application areas of recombinant DNA technology. Biogen has not disclosed what share of ownership Monsanto's purchase represents. Hence, it presently will not go the route of San Francisco-based Genentech, another gene splicing developer that went public a week earlier with a stock issue, causing a sensation on Wall Street.

ACS election reminder

Ballots for president-elect and for regional directors (Regions II and IV) were posted in Washington, D.C., on Oct. 3. Ballots were sent by third-class mail to members in the continental U.S. (except Alaska) and by first-class or air mail to all others. To be counted, ballots must be received at ACS headquarters on or before Monday, Nov. 17, 1980. Any member who has not received the ballot mailing by Nov. 3 should contact Rodney N. Hader, secretary of the society, at (202) 872-4461; replacement ballots will be sent by first-class mail.

Committee on Nominations & Elections

U.S. foreign chemical investment still strong

Despite growth of foreign investment in U.S. chemical industry, U.S. firms' foreign chemical investments still total more, perform better

The old fear in many parts of the world of increasing U.S. control of foreign chemical industries has changed to fear in the U.S. of the same thing happening in reverse.

Indeed, one of the outstanding trends of the 1970's was the greatly increased flow of the world's chemical investment funds into the U.S. because of newly perceived advantages in U.S. raw material costs, labor costs, political stability, and other background conditions.

But in spite of the big foreign takeover announcements, not that much has really changed. True, fresh chemical investment into the U.S. from outside is now slightly ahead of U.S. chemical investment in other countries. However, gross investment and earnings by U.S. chemical interests in other countries still far exceed investment and earnings of foreign chemical interests in the U.S. And foreign-owned chemical operations in the U.S. are still a small part of the total industry.

That's the picture emerging from the mass of statistics released by the Commerce Department, filling out earlier, more general conclusions (C&EN, Sept. 8, page 6). These numbers yield some interesting insights.

On one hand, foreign investment in the U.S. is certainly strong. New investment in U.S. chemicals and allied products from foreign countries at $743 million in 1979 was more than the $715 million invested by U.S. chemicals and allied products companies outside the U.S. And the 35% chemical share of total foreign investment in U.S. manufacturing is greater than the 24% chemical share of total U.S. manufacturing investment abroad.

However, for sheer size and earnings power, foreign chemical investment in the U.S. has a long way to go to equal U.S. investment abroad. Gross foreign investment in U.S. chemicals and allied products of $7.1 billion at the end of 1979 was just 37% of the $19 billion of U.S. investment in foreign chemical enterprises. Also, after-tax earnings of foreign-owned U.S. chemical affiliates of $430 million ran way behind the $3.3 billion in earnings of U.S.-owned chemical affiliates in other countries. The same sort of comparison is true for reinvested earnings and royalty payments.

By gross "investment," Commerce means the net book value of U.S. direct investors' equity (stock) in and outstanding loans to foreign affiliates in which a single U.S. investor owns at least 10% of voting securities. The current investment flows are new equity and account outflows (loans) for the latest year. Earnings include income from both incorporated and unincorporated affiliates, with all correction for interest and taxes on dividends.

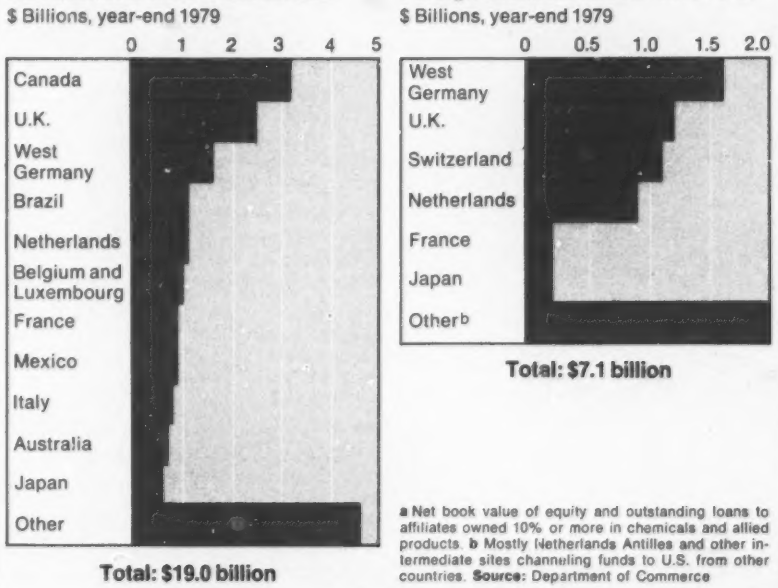
The current growth of U.S. chemical investment abroad, at 18% last year, is also greater than the 16% growth of foreign chemical investment in the U.S. despite the smaller amount of such foreign holdings in the U.S. In earnings, a 58% jump for U.S. interests abroad in 1979 far exceeded a 13% increase in foreigners' U.S. chemical income.

In other measures, reinvested earnings in incorporated affiliates rose 68% at foreign chemical operations of U.S. chemical owners, compared to 27% at U.S. chemical units owned from abroad.

Only in new chemical investment is the trend running relatively stronger toward the U.S. than away from it. Foreign owners cut 6% from new equity and loans in the U.S. in 1979, whereas U.S. investors slashed 27% from their new equity and loans abroad. However, this source of funds is small compared to reinvested earnings in total investment.

Another striking overall difference in chemical investment flows in and out of the U.S. is the number of major countries involved each way. U.S. investment abroad is much more dispersed than are leading sources of investment in the U.S.

Countries receiving chemical investment from U.S. are more diverse than countries investing in U.S.



a Net book value of equity and outstanding loans to affiliates owned 10% or more in chemicals and allied products. b Mostly Netherlands Antilles and other intermediate sites channeling funds to U.S. from other countries. **Source:** Department of Commerce

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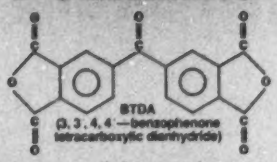

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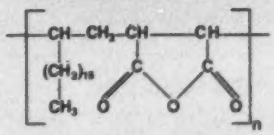

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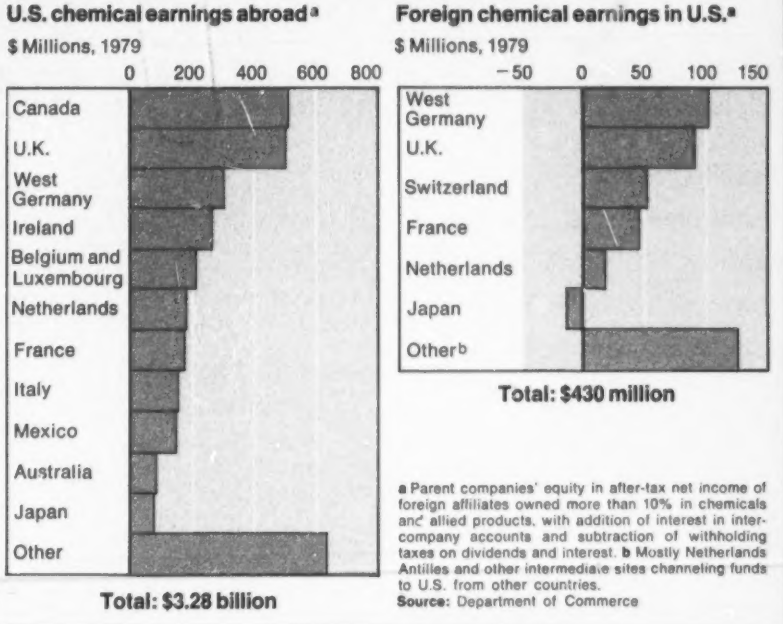
Earnings of U.S. chemical companies abroad dwarf earnings of foreign chemical companies in U.S.



a Parent companies' equity in after-tax net income of foreign affiliates owned more than 10% in chemicals and allied products, with addition of interest in intercompany accounts and subtraction of withholding taxes on dividends and interest. b Mostly Netherlands Antilles and other intermediate sites channeling funds to U.S. from other countries.
Source: Department of Commerce

The $19 billion in total U.S. chemical investment abroad is spread among a dozen major recipient countries and many smaller ones. And investment is growing 10% or more in all regions of the world. In the billion-dollar category are Canada with $3.2 billion, the U.K. with $2.5 billion, West Germany with $1.6 billion, Brazil with $1.1 billion, the Netherlands with $1.1 billion, and Belgium and Luxembourg with $1.0 billion combined at the end of 1979.

By region, Europe is by far the largest with 51% of total U.S. chemical investment abroad. Next are Latin America with 19% and Canada with 17%. All other areas are small, including Japan with just 3%.

From the other direction, gross chemical investment in the U.S. comes very largely from a few European countries. Tops in direct funding is West Germany with $1.6 billion, followed by the U.K. with $1.2 billion, Switzerland with $1.1 billion, and the Netherlands with $900 million. Other direct sources are much smaller, notably France and Japan at $200 million apiece. Fully 74% of direct chemical investment in the U.S. comes from Europe.

With foreign chemical investment in the U.S., there is a considerable presence of indirect funds through tropical way stations such as the Netherlands Antilles and the Bahamas. This route accounted for $1.5 billion in foreign ownership of U.S. chemical operations at the end of 1979, up from $1.2 billion the year before. Such a path as yet plays no important role in U.S. chemical investment abroad.

In earnings from chemical investments abroad, the Europe-U.S. tie is also quite prominent. For U.S. investment abroad, 60% of earnings come from Europe. This source zoomed up 76% in 1979 over 1978.

In the reverse investment direction, European chemical investments in the U.S. made 73% of all chemical earnings by direct foreign investors. Probably even more than this went to Europe, since the intermediary owners in the Caribbean and other areas made another 27% of these earnings.

In perspective, these earnings by foreign chemical investors in the U.S. equaled about 4% of 1979 earnings of U.S. chemicals and allied products companies measured by the Federal Trade Commission. Earnings of U.S.-owned chemical operations abroad equaled 30% of the FTC's earnings total.

In terms of investment, the foreigners' total in the U.S. at the end of 1979 was about 7% of the comparable total of equity and debt measured by FTC for U.S. chemicals and allied products companies. U.S. companies' investment in non-U.S. chemical operations ran about 19% of this total.

Obviously, the foreign chemical presence in the U.S. is substantial and growing. But U.S. chemical companies are holding up their end quite well in the international investment exchange.

William Fallwell, New York